

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (Canceled)

2. (Currently Amended) A method of decoding a symbol sequence in a received DS-CDMA signal according to claim 1, comprising the steps of:  
iterative calculation of a hard-decision vector, using a decision threshold having a value based on the probability of each ternary alphabet element of each symbol in the hard-decision vector;

demodulating the received signal, thereby providing a symbol sequence[.];  
calculating a matrix product of the symbol sequence and [[the]] a Hadamard decoding matrix[.];

calculating an estimate of a decision threshold, assuming equal probability of the ternary alphabet element of each symbol in the symbol sequence[.];

calculating a hard-decision vector using the calculated decision threshold[.];

calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector[.];

calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector[.]; and

iterating the steps of calculating a hard-decision vector, calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector and calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector, until the calculation of a decision threshold converges or the number of iterations reaches a predetermined maximum number of iterations.

3. (Currently Amended) ~~[[A]]~~ The method according to claim 2, wherein the symbol sequence is a sequence of acquisition indicators in an acquisition indicator channel and further comprises the step of:

selecting the AI of interest from the calculated hard-decision vector using a predetermined index.

4. (Canceled)

5. (Currently Amended) A User ~~user~~ equipment apparatus capable of decoding a symbol sequence in a received DS-CDMA signal, according to claim 4,  
~~comprising means for:~~

means for iterative calculation of a hard-decision vector, using a decision threshold having a value based on the probability of each ternary alphabet element of each symbol in the hard-decision vector;

means for demodulating the received signal, thereby providing a symbol sequence~~[[,]]~~;

means for calculating a matrix product of the symbol sequence and ~~[[the]]~~ a Hadamard decoding matrix~~[[,]]~~;

means for calculating an estimate of a decision threshold, assuming equal probability of the ternary alphabet element of each symbol in the symbol sequence~~[[,]]~~;

means for calculating a hard-decision vector using the calculated decision threshold~~[[,]]~~;

means for calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector~~[[,]]~~;

means for calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector~~[[,]]~~; and

means for iterating the steps of calculating a hard-decision vector, calculating an estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector and calculating a decision threshold using the estimate of the probability of each ternary alphabet element of each symbol in the hard-decision vector, until the calculation of a decision threshold converges or the number of iterations reaches a predetermined maximum number of iterations.

6. (Currently Amended) The apparatus of ~~User equipment according to claim 5, where~~ wherein the symbol sequence is a sequence of acquisition indicators in an acquisition indicator channel and further comprises[[[:]] means for selecting the AI of interest from the calculated hard decision vector using a predetermined index.

7. (New) An apparatus, comprising:  
a RF transceiver;  
an inner receiver coupled to the RF transceiver;  
a channel decoder coupled to the inner receiver;  
a controller coupled to the RF transceiver, the inner receiver and the channel decoder; and

a memory coupled to the controller, wherein the apparatus is capable of selecting acquisition indicators comprising calculating a decision threshold using an estimate of a probability of each ternary alphabet element of each symbol in a hard-decision vector, until a calculation of a decision threshold converges or a number of iterations reaches a predetermined maximum number of iterations.

8. (New) The apparatus of claim 7, wherein the inner receiver comprises a channel equalizer.

9. (New) The apparatus of claim 7, further comprising at least one of a speaker, microphone, keyboard, and display coupled to the controller.

10. (New) The apparatus of claim 7, wherein the inner receiver comprises a channel equalizer.

11. (New) A method of decoding a symbol sequence in a received DS-CDMA signal with a user equipment, comprising the steps of:

- demodulating a received signal;
- computing a matrix product of the demodulated signal and a Hadamard decoding matrix;
- estimating a decision threshold;
- calculating a hard-decision vector with the computed matrix product;
- estimating probability of each ternary alphabet element of each symbol in the hard-decision vector;
- calculating a new decision threshold using the estimate of the estimating probability step; and
- iterating until a calculation of a decision threshold converges or the number of iterations reaches a predetermined maximum number of iterations to select hard-decision vector elements.